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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------|------------------------|
| 10/573,337 | 02/21/2007 | Arjen Amelink | 207,517 | 5414 |
| 38137 | 7590 | 09/24/2008 | | |
| ABELMAN, FRAYNE & SCHWAB 666 THIRD AVENUE, 10TH FLOOR NEW YORK, NY 10017 | | | EXAMINER BHAT, ADITYA S | |
| | | | ART UNIT 2863 | PAPER NUMBER |
| | | | MAIL DATE 09/24/2008 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/573,337 | AMELINK ET AL. | |
| | Examiner | Art Unit | |
| | ADITYA S. BHAT | 2863 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-36 is/are pending in the application.
- 4a) Of the above claim(s) 17-25 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-31 and 33-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/21/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status

1. Claims 17-36 are currently pending in this application. Claims 17-36 are subject to a restriction requirement and claims 17-25 have been withdrawn from further consideration, as being drawn to a non-elected invention. Claims 1-16 have been canceled in a preliminary amendment.

Election/Restrictions

2. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group 1, claim(s) 17-25 and 32, drawn to calculating the physical feature by curve fitting wherein the backscatter function is a function of an average path-length traveled by detected scattered photons.

Group 2, claim(s) 26-31 and 33-36, drawn to calculating the physical feature by curve fitting wherein the backscatter function is a function of a mean free path of photons

The inventions listed as Groups 1 and 2 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the backscatter function being a function of a mean free path of photons is not required for the search for the 1st group and the backscatter function being a function of an average path-length traveled by detected scattered photons is not required for the second group.

During a telephone conversation with Anthony Natoli on September 22, 2008 a provisional election was made without traverse to prosecute the invention of group 2, claims 26-36. Affirmation of this election must be made by applicant in replying to this

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Office action. Claims 17-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 2/21/2007 was received. The submission is in compliance with the provisions of 37 CFR 1.97 and 37 CFR 1.98. Accordingly, the information disclosure statement has being considered by the examiner.

R.M.P. Doombos, R. Lang, M.C. Aalders, F.W. Cross, and H.J.C.M. Sterenborg, "The Determination of In Vivo Human Tissue Optical Properties and Absolute Chromophore Concentrations Using Spatially Resolved Steady-State Diffuse Reflectance Spectroscopy", Phys. Med. Biol. 44 (1999), pp. 967-981; cited n paragraph 0004 and H.C. van de Hulst, "Light Scattering by Small Particles", Wiley, New York, 1957; cited in paragraph 0035 of applicants specification should be cited on a information disclosure statement (1449) form.

Drawings

5. The drawings submitted on 2/21/2007 are in compliance with 37 CFR § 1.81 and 37 CFR § 1.83 and have been accepted by the examiner.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claim 31 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Specifically, the phrase "data carrier " is directed towards non-statutory subject matter.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 26-30 and 33-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Bigio et al (USPN 6,381,018).

With regards to claim 26, 29 and 30 Bigio et al (USPN 6,381,018) teaches a method, device and a computer program for determining a physical feature of a medium, comprising the steps of:

producing radiation with a light source; (Col. 2, lines 45-46)

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placing a probe (fig 2b) on a sample of the medium, the probe comprising a first optical fiber (5) having a first diameter, and at least a second optical fiber (6) having a second diameter; (col. 2, lines 47-51)

sending light coming from the light source, through the first optical fiber; (Col. 2, lines 47-48)

collecting first backscattered radiation through the first optical fiber and second backscattered radiation through the second optical fiber; producing a first signal (I) based on the first backscattered radiation, and a second signal (J) based on the second backscattered radiation; (col. 2, lines 50-55)

determining a measured differential backscatter signal as a function of wavelength using the first and second signals (I, J); (Col.4, lines 55-58) and

calculating the physical feature by curve fitting the measured differential backscatter signal to a backscatter function, in which the backscatter function is a function of a mean free path of photons. (col. 5, lines 19-35)

With regards to claim 28, Bigio et al (USPN 6,381,018) teaches the physical feature is a concentration of at least one substance in the medium. (Col. 7, lines 42-47)

With regards to claim 33-35, Bigio et al (USPN 6,381,018) teaches simultaneously measuring backscatter radiation on different locations of the sample; (16;figure 2a), determining a physical feature for the different locations; (col.7, lines 9-13)and calculating a standard deviation of the physical feature. (normalize; Col. 7, lines 18-20)

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With regards to claim 36, Bigio et al (USPN 6,381,018) teaches the physical feature is a concentration of at least one substance in the medium. (Col.6, lines 58-61)

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Alfano et al. (USPN 5,949,077) teaches a technique for imaging an object in or behind a scattering medium

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADITYA S. BHAT whose telephone number is (571)272-2270. The examiner can normally be reached on M-F 9-5:30.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aditya Bhat/
Examiner, Art Unit 2863
September 22, 2008